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AHA SCIENTIFIC STATEMENT

2026 Dietary Guidance to Improve Cardiovascular Health: A Scientific Statement From the American Heart Association

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ABSTRACT: Poor diet quality is strongly associated with elevated cardiovascular disease morbidity and mortality risk. This American Heart Association scientific statement for food-based cardiovascular health optimization and cardiovascular disease risk reduction guidance summarizes available evidence and provides contextual guidance for the key features of heart-healthy dietary patterns. It enumerates collateral benefits of adopting a heart-healthy dietary pattern in terms of nutrient intake adequacy and compatibility with other chronic disease risk reduction guidance. The features of a heart-healthy dietary pattern include (1) adjusting energy intake and expenditure to achieve and maintain a healthy body weight; (2) eating plenty of vegetables and fruits and choosing a wide variety; (3) choosing foods made mostly with whole grains rather than refined grains; (4) choosing healthy sources of protein; (5) choosing sources of unsaturated fats in place of sources of saturated fat; (6) choosing minimally processed foods instead of ultraprocessed foods; (7) minimizing intake of added sugars in beverages and foods; (8) reducing sodium intake by choosing foods low in sodium and preparing foods with minimal or no salt; and (9) if alcohol is not consumed, do not start; if alcohol is consumed, limit intake.

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Key Words: AHA Scientific Statements ■ cardiovascular diseases ■ diet ■ food ■ nutrition policy ■ risk reduction behavior

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This scientific statement supersedes the "2021 Dietary Guidance to Improve Cardiovascular Health: A Scientific Statement from the American Heart Association".[1] Poor diet quality remains a significant contributor to increased risk of cardiovascular disease (CVD) morbidity and mortality. The purpose of this scientific statement is to provide a concise update that summarizes food-based cardiovascular health optimization and CVD risk reduction guidance related to aspects of a heart-healthy dietary pattern. The target population is the general population across the span of CVD risk (low to high), including those with established disease. This statement (1) reinforces the importance of focusing on heart-healthy dietary patterns rather than on single foods or nutrients; (2) highlights the necessity of adopting heart-healthy eating habits early in life and maintaining them across the life course; (3) organizes the guidance into features to facilitate adoption of a dietary pattern that supports cardiovascular health; and (4) recognizes the additional benefits that come with adoption of a heart-healthy dietary pattern beyond CVD. (The Supplemental Material includes the literature review protocol, evidence tables, and included and excluded articles.)

DIETARY PRINCIPLES

Focus on Dietary Patterns

Since 2021, American Heart Association dietary guidance has focused on overall dietary patterns.[1] Dietary patterns encompass all foods and beverages consumed throughout the day, whether prepared and consumed at home or outside the home. Adherence to heart-healthy dietary patterns is associated with optimal cardiovascular health.[1,2] Food-based dietary pattern guidance is designed to achieve nutrient adequacy; to support cardiovascular health and general well-being; and to provide

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flexibility to accommodate personal preferences, ethnic and religious practices, and life stages. In general, heart-healthy dietary patterns contain primarily vegetables and fruits, whole grains, healthy sources of protein, liquid nontropical plant oils (eg, soybean, canola, olive oils), and minimally processed foods. Dietary patterns higher in plant-based foods and lower in animal products have been associated with lower coronary heart disease risk and more favorable coronary heart disease risk factors and metabolome profiles.[3] Heart-healthy dietary patterns are also low in beverages and foods with high amounts of added sugars, saturated fat, and sodium.

Consume Heart-Healthy Dietary Patterns Across the Life Course

The origins of CVD begin early in life. Establishing a heart-healthy dietary pattern is fundamental to maintaining cardiovascular health throughout the life course. The relevance of diet quality on cardiovascular health starts as early as the prenatal period. Prepregnancy maternal dietary patterns and other lifestyle behaviors are associated with risk of gestational diabetes and hypertensive disorders of pregnancy.[4] Dietary patterns early in life are linked not only to childhood cardiovascular parameters such as obesity, metabolic syndrome, hypertension, dyslipidemia, and type 2 diabetes but also to lifelong dietary patterns and cardiovascular risk.[5–7] Thus, a heart-healthy dietary pattern is recommended for children starting at 1 year of age and is a key component of a favorable cardiovascular health trajectory throughout adulthood.[8] Although older adults have unique health considerations that affect dietary intake, heart-healthy dietary patterns provide similar cardiovascular benefits in this group.[9,10]

Dietary habits and dietary patterns are shared, experienced, and transmitted among household members.[11,12] They are learned early in life, although there are key inflection points where dietary trajectories can change along the life course, including childhood, adolescence, and young adulthood.[13] Role modeling heart-healthy dietary patterns at every life stage can help sustain cardiovascular health across the life course and encourage favorable intergenerational transmission of positive lifestyle behaviors.[14] It is recognized that dietary needs at specific stages across the life course may change. Such needs should be discussed with a person's clinician.

Choose Foods and Beverages Consistent With These Features Regardless of Where They Are Procured, Prepared, or Consumed

The dietary guidance in this document applies to all foods and beverages. Food is procured, prepared, and consumed in multiple venues such as homes, commercial establishments, institutions (eg, schools, workplaces, hospitals), and recreational venues. It is important to be mindful of heart-healthy dietary features when choosing foods and beverages regardless of time, location, or setting. This will facilitate achieving a heart-healthy dietary pattern that encourages the availability of heart-healthy choices and supports enactment of policies that favorably affect food and beverage options.

FEATURES OF DIETARY PATTERNS THAT PROMOTE CARDIOVASCULAR HEALTH

The Table and Figure summarize the features of a heart-healthy dietary pattern.

Feature 1: Adjust Energy Intake and Expenditure to Achieve and Maintain a Healthy Body Weight

Preserving a healthy body weight across the life course is central to optimizing cardiovascular health. Currently, obesity affects 21% of children and adolescents, and 40% of adults in the United States.[15] Excess body fat contributes to the development of type 2 diabetes, hypertension, and cardiovascular-kidney metabolic syndrome, which negatively influences cardiovascular health.[17]

Excess energy intake coupled with inadequate physical activity results in positive energy balance and subsequent overweight and obesity. Individual energy needs depend on a number of factors such as age, sex, height, weight, physical activity level, and pregnancy or lactation status. Energy intake should be adjusted to achieve and maintain a healthy body weight. Preschool-aged children should be physically active throughout the day. Older children and adolescents should engage in at least 60 minutes of moderate to vigorous physical activity daily.

Table. Features of a Dietary Pattern to Promote Cardiovascular Health

1. Adjust energy intake and expenditure to achieve and maintain a healthy body weight
2. Eat plenty of vegetables and fruits and choose a wide variety
3. Choose foods made mostly with whole grains rather than refined grains
4. Choose healthy sources of protein
a. Shift from meat to plant sources (legumes and nuts)
b. Regularly consume fish and seafood
c. Select low-fat or fat-free dairy products instead of full-fat dairy products
d. If red meat is desired, choose lean cuts, avoid processed forms, and limit portion size
5. Choose sources of unsaturated fat in place of sources of saturated fat
6. Choose minimally processed foods instead of ultraprocessed foods
7. Minimize intake of added sugars in beverages and foods
8. Choose foods low in sodium and prepare foods with minimal or no salt
9. If alcohol is not consumed, do not start; if alcohol is consumed, limit intake

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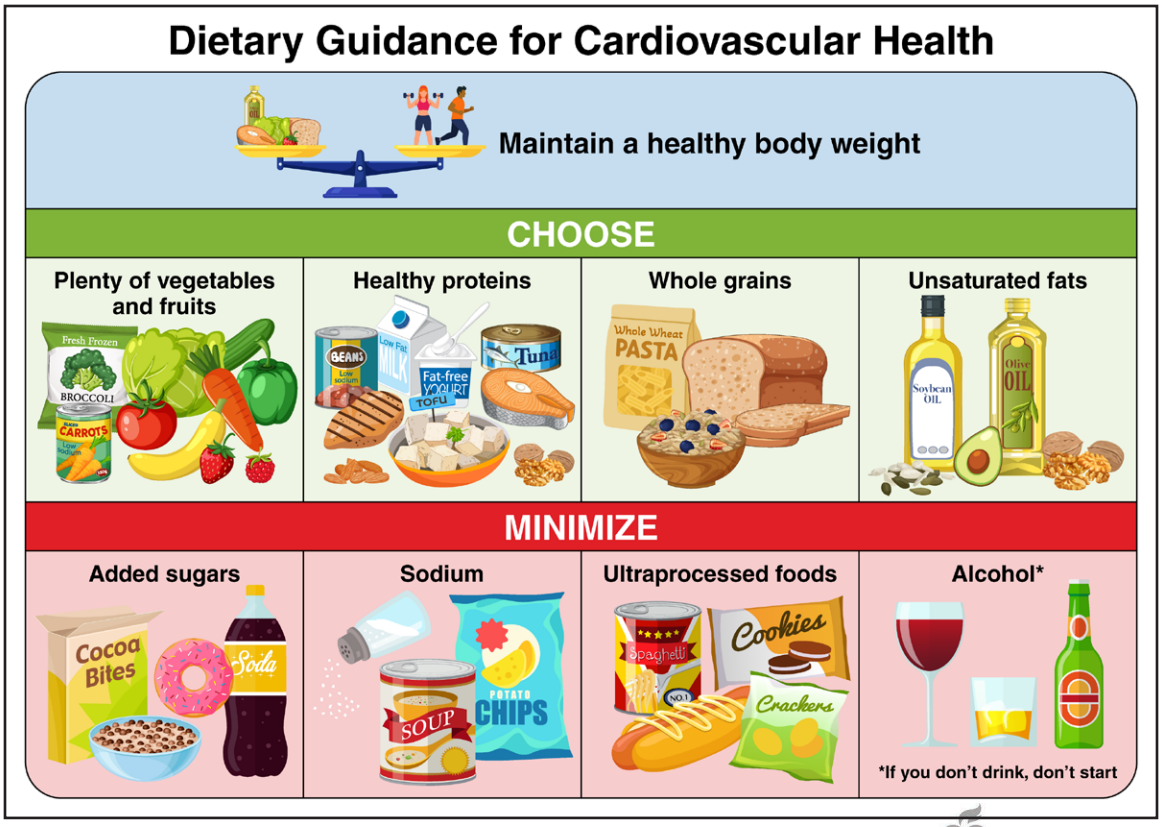

Figure. Features of a dietary pattern to promote cardiovascular health.

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Adults should engage in at least 150 min/wk of moderate to vigorous physical activity.[18] All individuals should be encouraged to participate in muscle-strengthening activities throughout the life course.[19]

A range of dietary patterns, including healthy versions of commonly named diets when implemented as intended such as DASH (Dietary Approaches to Stop Hypertension), Mediterranean style, pescetarian, and ovo/lacto vegetarian, can support cardiovascular health and are aligned with achieving and maintaining a healthy body weight.[20] Some popular weight loss diets may result in short-term benefits but have uncertain long-term cardiovascular impact and can worsen cardiovascular risk factors.[21] Ultimately, understanding cultural factors, personal preferences, ethnic and religious practices, life stages, and socioeconomic contributors can assist in counseling and promoting the adoption of a heart-healthy dietary pattern that optimizes energy balance and promotes long-term adherence on an individual level.

Feature 2: Eat Plenty of Vegetables and Fruits and Choose a Wide Variety

Whole or minimally processed vegetables and fruits are core components of heart-healthy dietary patterns. These patterns are consistently associated with cardiovascular health, including blood lipids, blood pressure, and type 2 diabetes control.[22–26] Vegetables and fruits provide essential nutrients and in their whole form, rather than juice, provide much-needed dietary fiber. Practical considerations related to spoilage, convenience, availability, and cost can be mitigated by incorporating most forms of vegetables and fruits, including fresh, frozen, and canned. If frozen or canned varieties are purchased, they should preferably not contain added sugars or sodium.

Feature 3: Choose Foods Made Mostly With Whole Grains Rather Than Refined Grains

Whole grains are defined by the presence of all 3 components of the grain kernel—the starchy endosperm, inner germ, and outer bran—and provide a complex matrix of dietary fiber, vitamins, minerals, and other bioactive compounds.[27] Commonly consumed whole grains are whole wheat, oats, brown rice, quinoa, barley, and rye. A substantial body of observational evidence from large cohort studies demonstrates that regular consumption of whole-grain foods compared with infrequent intake is associated with lower risks of CVD, coronary heart disease, stroke, type 2 diabetes, and metabolic syndrome and more favorable cardiovascular risk factors, including blood pressure, blood lipids, and glycemic control.[28] Randomized controlled feeding trials have demonstrated that replacing refined grains with whole grains leads to improvements in cardiovascular risk factors.[29] In addition, diets high in fiber and whole grains have been linked to

favorable modulation of the gut microbiota, laxation, and a reduction in inflammatory cytokines.[30,31]

Feature 4: Choose Healthy Sources of Protein

Protein is an essential nutrient for growth, development, and overall health, but the relationship between protein quantity and cardiovascular health is uncertain.[32] Thus, recommendations for protein center on promoting heart-healthy protein sources which are determined predominantly by fatty acid profile and fiber content. Given the broad range of protein-rich foods, particularly in terms of these associated components, this feature is divided into subgroups.

Shift From Meat to Plant Sources (Legumes and Nuts)

Legumes (beans, peas, and lentils) and nuts are good sources of protein and are rich in unsaturated fat and fiber. Dietary patterns higher in legumes and lower in red and processed meat have been associated with lower CVD and coronary heart disease risk.[33–35] Likewise, dietary patterns higher in nuts have been associated with lower CVD and all-cause mortality risk.[36,37] Such dietary patterns, along with additional healthy lifestyle behaviors, are associated with lower CVD risk. The availability of plant-based meat alternatives can help diversify protein choices but requires some caution because many are ultraprocessed and come with added sugars, sodium, stabilizers, and preservatives.[38]

Regularly Consume Fish and Seafood

Prospective cohort studies have concluded that dietary patterns containing nonfried fish and seafood are associated with lower overall CVD events and myocardial infarction risk.[39–41] These associations may be due to the omega-3 fatty acid content of the fish and seafood, replacement of other sources of animal protein that tend to be high in saturated fat and low in unsaturated fat, or both.[39] Fish oil supplementation alone has not been demonstrated to lower CVD risk in otherwise healthy adults and in some people may be associated with an increased risk of atrial fibrillation.[42–44]

Select Low-Fat or Fat-Free Dairy Products Instead of Full-Fat Dairy Products

The potential benefits of low-fat and fat-free dairy products compared with full-fat dairy products are not without controversy and continue to be debated. A recent systematic review indicates that some dietary patterns that include low-fat dairy are associated with a lower CVD risk.[23] However, another systematic review specific to food sources of saturated fat concluded that limited evidence suggests that substituting higher-fat dairy with lower-fat dairy results in similar CVD risk.[45] This review found that conclusions could not be drawn about the relationship between higher-fat dairy and lower-fat dairy on blood lipids, blood pressure, and CVD mortality because of inadequate evidence. Of note, the effect of replacing full-fat dairy products with nonfat and low-fat dairy products or other nondairy sources of unsaturated fat shifts the composition of dietary patterns toward higher unsaturated to saturated fat ratios, those associated with most favorable cardiovascular health.[46]

Independently of fat content, the possibility has been raised that there are cardiovascular benefits of consuming fermented dairy such as yogurt and kefir that contain live bacteria because of modifications they induce in the gut microbiota.[47] However, the long-term clinical implications of these changes have yet to be determined.[48]

Given the available evidence, it would be prudent at this time to continue prior guidance to replace major sources of saturated fat, including dairy fat, with sources of unsaturated fat and to choose nonfat or low-fat dairy products.[1]

If Red Meat Is Desired, Choose Lean Cuts, Avoid Processed Forms, and Limit Portion Size

The effect of red and processed meat on CVD risk factors depends on the replacement food. Replacing red meat, including lean, unprocessed meat, with healthier sources of protein, especially plant sources, improves CVD risk factors.[22,49] Substitution analyses based on large cohort studies concluded that the replacement of red and processed meat with alternative foods (legumes, nuts, poultry, dairy, and eggs) was associated with a lower coronary heart disease risk.[50] The associations were strongest for processed than unprocessed red meat. Approaches to reduce intake include choosing lean cuts and limiting portion size and frequency of consumption.

The term processed meats generally refers to meat, poultry, or seafood products produced by smoking, curing, or salting or the addition of chemical preservatives.[51] Common examples include bacon, sausage, hot dogs, and deli meat (eg, turkey, ham, pepperoni, and salami). In addition to a meat base, common ingredients include salt, nitrates, flavor enhancers, binders and fillers, and smoke flavor. These additions are used to extend shelf life and to enhance flavor, texture, and appearance. Substitution analyses indicate that the replacement of processed meats with other protein sources is associated with lower mortality rates.[52]

In summary, dietary patterns higher in plant sources of protein and lower in animal sources of protein are associated with better cardiovascular health. If consuming animal protein, minimize processed meats, and prioritize lean cuts of unprocessed meat, including poultry; and reduce total intake, limit portion size and frequency of consumption.

Feature 5: Choose Sources of Unsaturated Fat in Place of Sources of Saturated Fat

Clinical trial evidence consistently shows that replacing sources of saturated fat with sources polyunsaturated

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fat and, to a lesser extent, sources of monounsaturated fat reduces low-density lipoprotein cholesterol concentrations, a causal risk factor for CVD.[53,54] In alignment, modeling analyses indicate that replacing sources of saturated fat with polyunsaturated fat is associated with reduced coronary heart disease risk.[55,56]

Animal fats (eg, beef tallow and butter) and tropical oils (eg, coconut oil, cocoa butter, and palm oil) are relatively high in saturated fat, whereas nontropical plant oils (eg, soybean, canola, and olive oils) are relatively high in unsaturated fat. Strong evidence shows that replacing butter with plant oils and spreads containing predominantly unsaturated fat decreases low-density lipoprotein cholesterol concentrations.[22] Limited evidence shows that substituting butter with plant oils and spreads with predominantly unsaturated fat is associated with a lower CVD morbidity and mortality risk.[22,57] Similarly, replacement of beef fat/tallow or lard with nontropical plant oils lowers low-density lipoprotein cholesterol concentrations.[58–61] Replacement of tropical plant oils with nontropical plant oils also lowers low-density lipoprotein cholesterol concentrations.[22,62]

In summary, as part of heart-healthy dietary patterns, nontropical plant sources of fat should be used as part of food preparation in place of animal fats and tropical oils.[45]

Feature 6: Choose Minimally Processed Foods Instead of Ultraprocessed Foods

Food processing has resulted in both beneficial and adverse effects. Benefits include improved food safety; extended shelf life; reduced costs; nutrient fortification to correct inadequacies; and preservation of nutritional, functional, and sensory qualities.[63–66] Drawbacks include high levels of sodium, added sugars, and ingredients not normally present in food, as well as modifications that remove healthful components such as fiber and some nutrients. For consistency, in this document, this category of foods is referred to as ultraprocessed foods. Variability that has emerged in terminology can be attributed to the lack of a generally accepted classification system. The most commonly used one is Nova, which classifies ultraprocessed foods based on the extent and purpose of industrial processing and if they contain cosmetic additives or ingredients not commonly used in home cooking without factoring in nutrient content.[67]

Worldwide, the sales of ultraprocessed foods are relatively high and are projected to increase. The major concern with this trend is the strong evidence base linking dietary patterns high in ultraprocessed foods to multiple adverse health outcomes, including overweight and obesity, CVDs, type 2 diabetes, and all-cause mortality.[67–70] Evidence is limited for mechanisms of actions linking dietary patterns high in ultraprocessed foods to adverse health outcomes. This may be due to the wide range of potential causal factors in the broad category of foods classified as ultraprocessed. Nevertheless, evidence consistently indicates that efforts should be made to promote the benefits of choosing minimally processed foods and to facilitate a shift away from ultraprocessed in the marketplace.[71] If successful, the latter will lead to greater availability of minimally processed foods in the various venues where food is procured or eaten.

Feature 7: Minimize Intake of Added Sugars in Beverages and Foods

Added sugars are defined as all forms of sugar that are added to foods and beverages during processing or preparation. These include brown sugar, cane sugar, confectioner's sugar, coconut sugar, invert sugar, raw sugar, white granulated sugar, corn syrup, high-fructose corn syrup, rice syrup, malt syrup, maple syrup, pancake syrup, fruit juice concentrates, nectar, concentrated vegetable juices, honey, molasses, dextrose, fructose, glucose, maltose, lactose, and agave nectar. There is strong evidence to support recommendations to minimize added sugar intake across the life course.[22,55]

Dietary patterns high in added sugars are consistently associated with adverse cardiovascular health and higher CVD risk.[72] Systematic reviews have linked sugar-sweetened beverages to higher risk of obesity, type 2 diabetes, coronary heart disease, and cardiovascular mortality.[73,74] It has been estimated that adults consuming ≥25% of energy from added sugars have a nearly 3-fold higher risk of CVD mortality compared with those consuming <10% of energy from added sugars after adjustment for adiposity and other potential confounders.[75]

Feature 8: Choose Foods Low in Sodium and Prepare Foods With Minimal or No Salt

In general, dietary sodium intake and potassium intake have opposite effects on blood pressure, the leading modifiable risk factor for preventable mortality. An increased intake of sodium chloride (salt) raises blood pressure, whereas an increased intake of potassium lowers blood pressure.

Reducing sodium intake lowers blood pressure in both nonhypertensive and hypertensive individuals.[76] In prospective cohort studies, lower sodium intakes are associated with blunted age-related rise in systolic blood pressure and lower CVD risk, especially in studies with rigorous assessment of sodium intake.[77,78] In general, the effects of sodium reduction on blood pressure tend to be greater in Black individuals, middle- and older-aged adults, and people with hypertension and diabetes.

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Evidence for an independent blood pressure–lowering effect of potassium is consistent but not as persuasive as corresponding evidence for sodium. In meta-analyses of intervention trials, increased potassium intake, from either diet or supplements, lowered blood pressure.[79] In prospective cohort studies, higher potassium intake was associated with a lower CVD risk.[78] Potassium intake can be increased by consuming a dietary pattern rich in vegetables and fruits.

Available evidence supports a combined approach of reducing sodium intake and increasing potassium intake for hypertension prevention and control.[80] This can include reducing sodium intake in the context of a potassium-rich diet such as one high in vegetables and fruits or replacing regular table salt, sodium chloride, with potassium-enriched salt substitutes, which are lower in sodium.[81] Many questions remain for the latter approach, particularly the relevance of salt substitutes in populations in whom the major source of sodium is commercially prepared foods and the theoretical risk of hyperkalemia in people with impaired urinary potassium excretion.[82]

Feature 9: If Alcohol Is Not Consumed, Do Not Start; if Alcohol Is Consumed, Limit Intake

Understanding the relationship between alcohol intake and CVD is challenging.[83] Prospective cohort studies have identified a possible protective association of low/moderate alcohol intake and coronary heart disease risk, but these findings are subject to residual confounding by socioeconomic and lifestyle factors also related to CVD risk. More recent approaches into estimating the impact of alcohol on CVD risk such as mendelian randomization have called these observations into question and identified no significant association between genetically predicted alcohol consumption and risk of coronary artery disease.[84–86] It is important to note that the relationship between alcohol intake and blood pressure (and the risk for hypertension) appears linear and progressive, beginning at the lowest intake levels.[83,87]

Based on the new findings, the 2025 American Heart Association/American College of Cardiology blood pressure management guideline recommended avoiding alcohol intake for the prevention or treatment of elevated blood pressure and hypertension.[88] Avoiding alcohol intake has also been advocated by the US Department of Health and Human Services and the World Health Organization to reduce the risk of certain cancers, including oral, esophageal, breast, liver, and colorectal cancer.[89,90] Binge drinking and heavy drinking should be strongly discouraged because the health risks for most forms of CVD, including hypertension, among other adverse effects, are well established.[83] Initiation of alcohol intake at any level to improve cardiovascular health is not recommended given the uncertainty about net health effects and especially considering the deleterious effects of alcohol on numerous other outcomes.

ADDITIONAL BENEFITS OF HEART-HEALTHY DIETARY PATTERNS

Heart-Healthy Dietary Patterns Will Result in Desirable Nutrient Profiles

Fulfills Essential Nutrient Requirements for Most Individuals

Heart-healthy dietary patterns are rich in nutrient-dense foods and beverages that contain vitamins, essential minerals, and other health-promoting components.[20] Following a heart-healthy dietary pattern will meet nutrient requirements for most people. The benefit of getting nutrients from food rather than supplements is the concurrent presence of phytochemicals that may provide health benefits and avoidance of overconsumption risk for individual nutrients. Following a heart-healthy dietary pattern obviates the need for dietary supplements in most individuals except pregnant women, some older adults, and those following restricted diets.

Rich in Fiber

Dietary fiber is the indigestible carbohydrate component of plants. Dietary fiber supports gastrointestinal function, provides fuel for the gut microbiota, and plays a role in the regulation of blood glucose.[91–93] Dietary patterns rich in fiber have been associated with reduced risk of CVD, type 2 diabetes, and colorectal cancer.[94–98] Good sources include vegetables, fruits, whole grains, nuts, legumes, and seeds.

Limits Foods High in Cholesterol

Dietary cholesterol is no longer a primary target for CVD risk reduction for most people. Nevertheless, heart-healthy dietary patterns are low in foods high in cholesterol such as fatty cuts of meat and foods typically eaten with eggs such as processed meats (sausage or bacon).[99] Moderate egg consumption can be included as part of a heart-healthy dietary pattern.

Facilitates Saturated Fat Intake <10% of Energy

Dietary patterns that adhere to the 9 features outlined in this document are unlikely to exceed 10% of energy from saturated fat.[20,22]

Consistent With Other Chronic Disease Diet Recommendations

Heart-healthy diets are generally consistent with risk reduction dietary patterns recommended for other conditions such as type 2 diabetes, some cancers, kidney disease, and cognitive health.[100–108]

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SUMMARY

This scientific statement for food-based cardiovascular health optimization and CVD risk reduction guidance summarizes the available evidence and provides contextual guidance for the key components of heart-healthy dietary patterns. It enumerates the collateral benefits of adopting a heart-healthy dietary pattern in terms of nutrient intake adequacy and compatibility with other chronic disease risk reduction guidance. It reinforces the importance of focusing on heart-healthy dietary patterns rather than on single foods or nutrients; adopting healthy eating habits early in life and maintaining them across the life course; and adhering to the guidance regardless of where foods and beverages are procured, prepared, and consumed. The features of a heart-healthy dietary pattern include (1) adjusting energy intake and expenditure to achieve and maintain a healthy body weight; (2) eating plenty of vegetables and fruits and choosing a wide variety; (3) choosing foods made mostly with whole grains rather than refined grains; (4) choosing healthy sources of protein; (5) choosing sources of unsaturated fats in place of sources of saturated fat; (6) choosing minimally processed foods instead of ultraprocessed foods; (7) minimizing intake of added sugars in beverages and foods; (8) reducing sodium intake by choosing foods low in sodium and preparing foods with minimal or no salt; and (9) if alcohol is not consumed, do not start; if alcohol is consumed, limit intake.

ARTICLE INFORMATION

The American Heart Association makes every effort to avoid any actual or potential conflicts of interest that may arise as a result of an outside relationship or a personal, professional, or business interest of a member of the writing panel. Specifically, all members of the writing group are required to complete and submit a Disclosure Questionnaire showing all such relationships that might be perceived as real or potential conflicts of interest.

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Disclosures

Writing Group Disclosures

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Alice H. Lichtenstein	Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts University	USDA (Diet Quality and Physical Activity for Healthy Aging and Chronic Disease Mitigation)*; NIH (Tufts Clinical and Translational Science Institute)*; USDA (elucidating the role of gut microbiota derived metabolites in regulating the impact of dietary stearic acid on host cardiometabolic risk status)*; NIH (ingestible pill for spatially targeted sampling of gut microbiome)*; USDA (Full-Fat and Fat-Free Dairy, With and Without Fermentation, on Gut Microbiome, Gut and Serum Metabolome, and Host Cardiometabolic Risk Status)*; USDA (elucidating the effect of dietary stearic acid on the regional heterogeneity of the gut microbiome and metabolome: focus on bile acid metabolism)*	None	None	None	None	None	None
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Kristina S. Petersen	Pennsylvania State University	National Cattlemen's Beef Association†; American Pecan Council†; Egg Nutrition Center†; Alliance for Potato Research & Education†; American Pecan Promotion Board†; Cotton Incorporated†; McCormick Science Institute† (PI of grant for all)	None	None	None	None	Potatoes USA*; McCormick Science Institute*; The Peanut Institute*	None

This table represents the relationships of writing group members that may be perceived as actual or reasonably perceived conflicts of interest as reported on the Disclosure Questionnaire, which all members of the writing group are required to complete and submit. A relationship is considered to be "significant" if (a) the person receives $5000 or more during any 12-month period, or 5% or more of the person's gross income; or (b) the person owns 5% or more of the voting stock or share of the entity, or owns $5000 or more of the fair market value of the entity. A relationship is considered to be "modest" if it is less than "significant" under the preceding definition.

*Modest.

†Significant.

Reviewer Disclosures

Reviewer	Employment	Research grant	Other research support	Speakers' bureau/ honoraria	Expert witness	Ownership interest	Consultant/advisory board	Other
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This table represents the relationships of reviewers that may be perceived as actual or reasonably perceived conflicts of interest as reported on the Disclosure Questionnaire, which all reviewers are required to complete and submit. A relationship is considered to be "significant" if (a) the person receives $5000 or more during any 12-month period, or 5% or more of the person's gross income; or (b) the person owns 5% or more of the voting stock or share of the entity, or owns $5000 or more of the fair market value of the entity. A relationship is considered to be "modest" if it is less than "significant" under the preceding definition.

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